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ABSTRACT

This document contains the first six research updates to "Alaska's Adolescents: A Plan for the Future," a comprehensive 1994 report on adolescent health issues prepared by the multiagency Alaska Adolescent Health Advisory Committee. "The Media and Adolescent Health: Television's Impact on Certain Teen Behaviors" (Elizabeth Hatton) examines the influence of television and other media on child and adolescent behaviors related to violence, sexuality, smoking, and drinking and on youth obesity, creativity, and consumerism. "Unintentional Injury among Adolescents" (Elizabeth Hatton) provides U.S. and Alaska data on unintentional teenage injuries and deaths related to bicycles and motor vehicles, drowning, and firearms. "Mentoring Programs" (Ley Schleich) discusses elements of successful mentoring programs related to program planning, the mentor-mentee relationship, and program infrastructure. "Sexuality Education Program Effectiveness" (Mary O'Bryan) describes various approaches to sex education and the success of certain strategies in reducing sexual risk-taking behavior. "School-Based Health Centers" (Elizabeth Hatton) examines components of school-based health centers; the extent to which they work in relation to access, pregnancy prevention, student health status, academic performance, and substance abuse prevention; and the need for more centers in Alaska. "Peer Education Programs" (Tammy Green) describes elements of effective peer education programs. (Contains references.) (SV)

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Adolescent Health and Research Updates Supplement to the Adolescent Health Plan Numbers 1-6, December 1996-November 1997

Ley Schleich, Ed.

Alaska Adolescent Health Advisory Committee

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A PLAN FOR THE FUTURE

Adolescent Health Research Updates

Supplement to the Adolescent Health Plan

No 1 — December 1996

This is the first of many Research Updates that will be published periodically by the Alaska Adolescent Health Advisory Committee (AHAC). AHAC believes that effective planning for the health of Alaska's adolescents should have a strong scientific basis. Alaska's Adolescents: A Plan for the Future, the 1994 publication by AHAC, was the product of the committee's review of research related to adolescent health at that time. In order to stay current with new information, AHAC continually reviews research dealing with a broad range of adolescent health topics. Summary reports are prepared by AHAC members for distribution to people interested in teen health, especially those who use Alaska's Adolescents as a guide for their efforts in the field. Feedback about the usefulness of these updates is welcomed.

The Media and Adolescent Health

Television's Impact on Certain Teen Behaviors

On average, children and teens spend 22 hours each week watching TV. This approaches the average amount of time spent in school: 33 hours per week.[1] What do children get from this medium, and how does it affect their behavioral choices? This report is a review of what research has shown to be the relationship between the media (mainly television) and certain adolescent behaviors.

Research shows a cause-effect relationship regarding violence:

- **Media violence causes youth to behave more violently.**[1,2,3]
- **Media violence causes youth to become less sensitive to violence.**[2,3]

The impact of television on other behaviors is less clear: a causal relationship has not been proven, but research shows a strong correlation. For example, pregnant teens see TV relationships as more real than do non-pregnant teens.[4]

Some studies simply describe and analyze the content of media, leaving us to draw conclusions about its impact on the beliefs, attitudes, and behavior of kids. For example, 80% of MTV videos contain stories involving sexual imagery and violence against women.[3]

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The following paragraphs summarize these and other findings. Most of the information is from publications by the American Academy of Pediatrics' Committee on Communications,[2,3] and one of its members, Victor Strasburger, M.D.[3] Both the AAP and Dr. Strasburger conducted extensive reviews of the research literature for their reports.

Television and Violence

Children watch an average of 20,000-200,000 violent acts on TV by the time they finish high school.[1,3] The U.S. shows more TV and movie violence than anywhere in the world, and the amount is increasing. Guns are a frequent source of violence in all media.[1]

Media violence has a causal effect on aggressive behavior.[1,2,3] There are more than 1,000 studies dealing with the effect of watching TV violence on subsequent behavior. The evidence is so convincing that researchers have stopped viewing this relationship as merely correlational.[3]

Research indicates that media violence contributes to 5-15% of the violence in real life.[3] Strasburger found the settings in which TV acts as a causal agent for aggression and antisocial behavior include:

- rewarding or failing to punish the aggressor
- portrayal of the violence as being justified
- depiction of violence without consequences
- aggression against females by males engaged in sexual conquest[5]

One study suggests that half of all homicides are correlated with long term exposure to TV violence.[3] Another group of studies link media violence with burglary, theft and criminal violence.[3] Several longitudinal studies have established the relationship between watching TV violence in early grade school and aggressive behavior in later years.[6] The researcher's conclusion was that "for boys in all countries and for girls in the U.S., TV violence was associated with more aggressive behavior and was cumulative over time."[7]

Numerous studies have shown a strong link between TV portrayals of suicide and news reports and rates of subsequent suicide attempts and completions.[3] Identification with the suicide victim by the susceptible teenager may be a significant factor in attempting suicide.

Other links between the media and violence among youth include:

- **Media causes desensitization to violence.**[2,3] There is much evidence showing greater insensitivity to actual violence following the viewing of violence on TV.[3]

- **Videos, MTV, arcade games, and music targeting children and adolescents carry violent messages about the nature of our society.** A survey of the most popular video games found 40 out of 47 games to be violent. Video game research has shown correlations between video game violence and subsequent aggression in kids.[3]

- **Children who are heavy TV viewers see the world as more dangerous and violence as more acceptable.**[3] Although this is a correlation rather than causation, it reflects an unhealthy view of society.

- **Video games, music videos and MTV have aggression toward women as one of the dominant themes.**[4] Causal effects on behavior have not yet been established.[3]

Television and Sex

Not enough research has been conducted to determine if a causal relationship exists between viewing sex on TV and sexual experimentation. While it is known that TV contributes to cultural norms, the precise influence on teen sex has not been measured. Facts about the quantity and quality of sexual displays in the media are relevant, however.

- **Afternoon and evening network programs carry 65,000 sexual references per year.** A recent survey of 19 primetime TV programs most watched by teens found an average of 3 sexual references per hour, mostly kissing and unmarried intercourse. The display of sexual behavior on primetime television doubled between 1975-1988.[3]

- **Rarely does TV show the adverse consequences of having sex, i.e., pregnancy or sexually transmitted disease.**[3,4] Only 150 out of 14,000 sexual references seen by kids each year mention any responsibility or contraception.[3] Ninety-four percent of the sex on soap operas is between unmarried people; soap opera sex occurs 24 times more often between unmarried than married partners[3,4].

- **Eighty percent of MTV videos contain stories involving sexual imagery and violence against women.**[3]

- **Movies on cable television and video cassettes have increased youth access to sexually explicit materials.** A Michigan study found the most frequently watched movies by high school students were R-rated.[8] ("R" rated content is deemed inappropriate for people under 17, unless they are accompanied by an adult.)

- **TV portrays teenage girls in negative stereotypes.**[4] Television often shows young women as weak and in subordinate or victim roles in relation to men. In addition, women are often portrayed in jobs that are inferior or less professional than men.[4] Studies show that TV stereotypes are learned by kids and that these stereotypes are demeaning to women.[3]

Despite the high rates of teen pregnancy, STD's and the skewed images of sexual activity on television programming, the major networks have adopted the position that advertising of contraceptives would be unacceptable to viewers.[8]

Television and Alcohol & Tobacco

While products that reduce pregnancy and STD's are forbidden in most media forums, products known to cause disease and death to thousands of people annually—cigarettes and alcohol— are abundant in the media. The alcohol and tobacco industries spend billions of dollars annually on the basis that advertising works. Strasburger[3] reviewed the extensive research, and among the findings:

- **Children and teenagers are exposed to 1,000 -2,000 beer and wine commercials annually.** Less than 2% of alcohol content ads contain messages about personal responsibility. A 1989 study identified 25-50 alcohol commercials for every Partnership for a Drug Free America ad. Another study found children were able to identify more brands of beer than American presidents.

- **Tobacco products are the most heavily advertised consumer product in the United States, despite the ban of tobacco advertising on TV in 1971.** Tobacco companies spend $4 billion a year on advertising. Pre-school children in one study

found the Joe Camel character was as well-known as Mickey Mouse.

Movies and television programming contain numerous alcohol and cigarette messages. Victor Strasburger in his research review of the affects of media on adolescent behavior found:

- **100% of the made-for-TV movies in 1986 contained drinking behavior or references to it.** Since 1984 references to alcohol have decreased from 10 per hour to 6 per hour in 1991.

- **Movies show cigarette smoking frequency three times that of the actual average use.** TV programming has shown a steady decrease of smoking by its characters since 1952. While only 2% of TV series stars smoke, very few are shown in situations expressing antismoking sentiments.

Many studies show correlations between viewing these products and using them. Studies reviewed by Strasburger[3] show:

- **Cigarette advertising appears to increase a teenager's risk of smoking** by affecting their image of smokers and smoking is the conclusion from studies by the Centers for Disease Control and Prevention.

- **The cigarettes most popular among teenagers smokers are the brands most heavily advertised.**

Other Health Effects of Television

TV watching is correlated with being overweight.[2,9] The hours spent watching TV replace hours of other childhood activities. Only three percent of the 10,000 TV food commercials seen by kids each year, advertise food that is truly healthy. Studies have found a correlation between children viewing "junk food" ads and an increase in requests for those same foods.[1] While some research has shown a causal relationship between TV watching and obesity,[3] other researchers disagree with this conclusion.[10]

TV watching is correlated with a reduction in creative imagination. A review of the research on this subject supports the thesis that TV increases daydreaming and decreases creative imagination.[11] Causal associations have not been established.

Advertising effectively teaches children to recognize, like and want products, regardless of any real benefit that may be derived from them, according to the National Science Foundation.[3] An average of 360,000 TV commercials will be seen by the time a teen graduates from high school.[3] TV advertising is a multibillion dollar industry. Young children do not know the difference between TV programming and advertising.[1,3]

Summary

The popular media and its effect on children and youth is a controversial topic in our society. Opinions about TV's benefit or harm to youth tend to be based more on a personal belief and value system than on thorough research. This may be in part because **determining** that TV causes a specific change in behavior or health status in a population is very difficult to do. It may also be due in part to the huge economic factors that drive TV programming.

This report is a summary of what well-conducted research concludes about television's effect on certain health-related behaviors. It does not look at all types of media, nor at all the ways in which a young person could be affected by media. It does, hopefully, offer clear evidence of the real and potential harm kids can suffer as television viewers.

Submitted by Elizabeth Hatton, M.D.

Adolescent Health Research Updates are a product of the Adolescent Health Advisory Commitee and are published by the Alaska Department of Health and Social Services; Division of Public Health; Section of Maternal, Child, and Family Health, 1231 Gambell Street, Anchorage, AK 99501, (907) 269-3425 (fax) 269-3432.

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A PLAN FOR THE FUTURE

Adolescent Health Research Updates

Supplement to the Adolescent Health Plan

No 2 — January 1997

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Unintentional Injury Among Adolescents

Injury is crippling our youth. Both national and state statistics report its toll.[1,2,3] Nationally, each year more lives are lost to injury than to all combined causes of death during the entire Vietnam war.[1] In Alaska, as in the nation, injury is the leading cause of death among youth aged 10-19.[2] Young people today die mainly as a result of injury from contact with vehicles, alcohol and firearms.[2]

What could prevent these deaths? There are many strategies that have been shown to prevent injury deaths. The licensing of all-terrain vehicle (ATV) users, curfews, helmet use, and the enforcement of alcohol laws are examples of effective means of saving lives.[4]

Injuries are considered either intentional (e.g., assaults, homicide, suicide) or unintentional (e.g., motor vehicle & bicycle crashes, drowning). Because subsequent reports will address violence and suicide, this report will focus on unintentional injury. Research on injury prevention demonstrates that unintentional injuries are predictable and preventable. The term "accident" is not used because it implies that the incident is unavoidable.

National Data

Unintentional injuries cause more than half of all deaths among adolescents.[2] Deaths are just the tip of the iceberg, however, as there are 16 hospitalized injuries for every death, and more than 300 doctor visits for every death, across all age groups.[3]

The Office of Technology, a scientific research group established by the U.S. Congress, reports that:

- 75% of teen unintentional deaths are vehicle-related and 50% of those are alcohol-related.
- Drownings (40% alcohol-related), firearms, and fires come next in frequency.
- Sports injuries are the greatest cause of non-fatal injuries, football being the most common cause. Knee injuries are the most common type.
- Ninety percent of bicycle deaths are bike-motor vehicle contacts, so the statistics are often part of the motor vehicle records.[2]

The Office of Technology Report has examined the demographics of unintentional injuries to adolescents and finds that there are variations with regard to:

1) **age:** the older the teen the more severe the injury;
2) **gender:** males are involved in many more injuries than females;
3) **ethnicity:** Native Americans' rate of injury is twice all others;
4) **residence:** the rural rate of injury is greater than urban;
5) **economic status:** poverty is correlated with a higher rate of injury;
6) **risk-taking behavior:**
   a) alcohol use, even below "legal" limits, has a high association with fatal accidents;
   b) 60% of adolescents don't wear seat belts, giving them twice the chance of being killed;
   c) 90% of adolescents don't use bike helmets, giving them ten times the chance of severe injury.[2]

It has been found that children and adolescents with behavioral problems have over one and a half times the chance of injury compared with other children.[5] Behavior traits that are associated with increased injury risk include hyperactivity, aggression, and antisocial behavior.[6] As in other areas of adolescent research, early markers of risk such as poverty, parenting problems and aggressive behavior can be found as common denominators in the incidence of injury. Addressing the early

risk factors should be part of injury prevention and general adolescent health promotion. (7,8)

Alaska Data

There are two excellent sources of information related to adolescent injury in Alaska: the Alaska Injury Prevention Plan, published by the State Injury Prevention Coalition in 1994[3], and the Alaska Trauma Registry, which publishes periodic reports on injuries throughout the state.[9, 20] From these two sources, we know that in Alaska:

1) Of all sources of unintended injuries, bicycles, sports, and ATV's have caused the greatest number of hospitalizations among young teens (age 10-14) for 1991-1992.[9]
2) Motor vehicles and suicide, more than anything else, killed older teens (age 15-19) during the 1991-1994 period. Injury death and hospitalization for this age group is twice the rate of any other age group.[20] Motor vehicle "accidents" are more likely to result in permanent disability than are other types of injuries.
3) Drowning was the second most common cause of death for kids, according to the 1991-1994 records. Half of these deaths were older teens.[20]
4) Native youth are hospitalized and die from injuries at more than twice the rate of any other ethnic group.[20]
5) Off-road vehicle injury was the most frequent cause of severe injury for 10-19 year-olds in many of Alaska's rural areas.[20]
6) Unintentional firearm injury was the second leading cause of hospitalization for the age 10-14 group in the Yukon-Kuskokwim region, in the most recent data.[20] Statewide, there has been a 45% increase in gunshot wounds to young people from 1991 to 1994.[20] The Alaska Youth Risk Behavior Survey (YRBS) indicates that more than a third of high school boys have carried weapons in the last month.[21]
7) For motorized injuries, lack of seat belts and helmets were contributing causes. The 1991-1994 records show that 29% of motorcycle crash victims under 18 years of age wore no helmet, even though helmet use is the law for this age group.[20]
8) For bicycle injuries, less than 4% of cyclists were wearing helmets when injured, according to the 1991-1994 statistics. The YRBS results show that close to 90% of high school students do not wear bike helmets.[21]
9) Alcohol was involved in many of the firearm, ATV and motor vehicle incidents in the 15-19 year-old age group.[20] Twelve

percent of high school students admit to drinking while driving in the 1995 YRBS. (21)

Costs

While the U.S. Congress continues to limit the Center for Disease Control and Prevention (CDC) budget to study injury, the costs of injury to the U.S. public continue to rise. In Alaska, the cost of each hospital stay for each motorcycle injury patient who was not wearing a helmet is about $27,000. Motor vehicle patients who were not wearing seat belts cost $18,000. each.[9] National figures show that 60% of motorcycle injuries associated with no helmet use are paid by Medicaid.[1] That means that the private decision to take risk comes right out of the public's pocket.[1]

Injury Prevention

Approaches to injury prevention have evolved from faulting the victims to applying the public health disease model. The most recent approach involves "the 3 E's" of education/behavior, engineering/technology, and enforcement/ legislation. Research has shown that in general, the engineering approach is more effective than the enforcement approach, and that education has been least effective.[2] Modifying the environment of individuals—through engineering or public policy—seems to be the most successful way to reduce the greatest number of injuries.

Ten years ago Frederick Rivara published a report that outlined the means for preventing injury to children.[10] Although it reflects what we know about effective injury prevention, the methods have not been consistently employed. What seems to be lacking is political will. Actions that can prevent a third of the deaths among children are not being taken.

This section summarizes what is known about prevention strategies for the three major causes of death among teens in Alaska: vehicles, drownings, and guns.

Vehicle Injury

Vehicle injury is the most thoroughly studied as well as the most frequent cause of death. Fortunately, it is very clear that the following approaches all would reduce the incidence of vehicle injury:

1) increase in the price of alcohol (tax)[4]
2) curfews (that eliminate the dangerous driving hours)[4]
3) use of motorcycle helmets[4]
4) use of bicycle helmets[4]
5) use of seat belts[4]
6) decrease in speed limits (the recent national increase is expected to cause at least 4000 more deaths each year)[4]
7) decrease of legal blood alcohol level[11]
8) delay of licensing and/or provisional licensing[11]
9) graduated licensing[27]
10) community based, coordinated, comprehensive programs to alter social norms in all age groups.[11]

Research shows the following does not work:

1) driver education programs (which, instead, seem to put inadequately trained teens onto the highways earlier)[1]
2) alcohol education programs alone, without license suspension following DWI convictions.[4]

In Alaska, the impact of ATV and snowmachine use is also significant. The American Academy of Pediatrics recommends drivers be licensed for snowmachines.[12] The National Committee for Injury Prevention and Control (NCIPC) recommends age and use controls on ATV's.[4] Alaska injury prevention experts also recommend the use of helmets for snowmobiles and ATV's.[20]

Drowning

Drownings represent almost 25% of unintentional deaths in Alaska. What would prevent them includes:

1) use of personal flotation devices (PFDs)[4]
2) laws, with funding for enforcement, requiring the use of PFDs[4]
3) blood alcohol laws applied to boating.[4]

Guns

Guns are a major factor in both unintentional and intentional injury. It is difficult to separate the research on violence, guns and unintentional injury because the studies often include suicide, homicide and "accidents". What is clear is that the states that have the most guns, have the most injuries from guns.[13] Detroit has more gun deaths per capita than Northern Ireland during its worst IRA troubles.[1] According to national researchers, at least half of our homes have firearms.[17] Half of

those have them in unlocked places.[18] In homes with both firearms and children, one-fourth of the firearms are stored unlocked and loaded.[19] Eighty-five percent of teens have access to guns.[13] Eighty-nine percent of child and teen firearm deaths occur in the home, with the peak incidence occurring between 4:00 and 5:00 PM.[23] In Alaska, there is one licensed gun dealer for every 75 people under age 25.[24]

What works to prevent gun injuries:

1) mandatory sentences for possession of guns during specific crimes (result in fewer gun deaths)[2]
2) handgun control laws (result in fewer suicides)[2]

Possible prevention strategies: Owner liability, firearm registration and licensing, ammunition modification, handgun bans, toy gun regulations, plastic handgun bans are all possible. There are pros and cons to each of these, and using multiple approaches may prove to be the best way.[15]

Alaska injury prevention experts also recommend the storage of guns a)unloaded, b)in locked locations, and c)with ammunition stored in a separate location.[20]

There is no evidence that the following work:

1) firearm safety programs aimed at kids[17]
2) increasing trigger pressure requirements.[16]

Summary

The research literature clearly demonstrates that unintentional injury costs us severely in lives, quality of life, and expense. In Alaska, vehicle injury, drowning, and firearms cause the greatest injury to youth. Many unintentional injuries can be prevented. The most effective prevention strategies are those in which the environment in which people work, live, and play is changed, through technology or public policy. Education has a role to play in prevention as well, especially when it is paired with technology and legislation. What is needed to employ effective strategies is a well-informed public and legislative leadership.

Submitted by Elizabeth Hatton, MD

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Supplement to the Adolescent Health Plan

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Mentoring Programs

Youth-adult mentoring programs were identified in the Adolescent Health Plan as one of the "promising approaches" to addressing teen health needs. This meant that there were enough positive references to mentoring programs in the research literature to merit its mention, but that there was insufficient evaluation information to meet the committee's criteria for recommending it as an effective strategy. This update provides a closer look at what recent research suggests about this popular approach.

"Mentoring" is defined differently by different people, but generally refers to arranging for a young person to spend time with an older person for a particular purpose. There is a tremendous amount of variation in how mentoring programs are administered, as well as in the outcomes that can be attributed to them. However, anyone considering putting a mentoring program in place (or funding one) would be wise to look closely at what research suggests are the specific factors that have been linked to effective programs.

The Evaluations

Evaluations of mentoring programs that were conducted after 1985 and which measured outcomes were reviewed.[1,2,3,4,5,6,7,8] Three summary analyses of the research literature were also reviewed.[9,10,11] Additionally, a number of articles and documents about implementation of mentoring programs were examined for references to the elements deemed necessary for successful programs.[12,13,14,15,16]

Seven mentoring programs had evaluations that included outcome data and appeared to be well-conducted research. Because of the huge variation in the design and implementation of the programs, the outcome data cannot be summarized collectively. Programs varied greatly in their:

- **objectives:** *e.g., improve school attendance; improve school performance; reduce drop-out rate; reduce high-risk behaviors such as substance abuse; increase job acquisition; raise self-esteem; reduce anti-social activities; improve relationships with family; improve relationships with peers; provide social and cultural enrichment*
- **age of mentees:** *upper elementary school through high school seniors*
- **type of mentors:** *community or business leaders; college students; retirees; other citizens; volunteers and paid advocates*
- **program sites:** *many, but not all, were inner cities*
- **participants:** *many, but not all, were minority, primarily Black*
- **length of involvement:** *a few months to several years*
- **frequency of contact:** *once every few weeks to several times a week*
- **type of contact:** *formal and structured to informal and unstructured*
- **nature of mentor-mentee relationship**
- **other elements or activities offered mentees** *(e.g., career planning, motivation workshops)* **and/or mentors** *(e.g., training, ongoing supervision and support)*; and
- **the amount and type of supports and infrastructure in place**.

Results of the evaluations also varied widely. Two studies showed improvement in school attendance,[3,5] but two showed no difference.[7,8] Four studies showed no significant difference in academic performance or graduation rates,[3,6,7,8] but three studies showed improved educational attainment, greater post-secondary enrollment, and higher educational aspirations (1,4,5). One study showed significant difference in income acquisition and significantly less dependence on social assistance;[4] one study showed no significant difference in wages or job satisfaction.[6] Two studies included discipline-related measures; one showed improvement[5] but one did not.[7] Three studies measured aspects of self concept; two showed improvements among program participants;[4,5] one did not.[8] One study measured substance use and showed large and significant reduction in initiation of drug and alcohol use.[5] This study also showed improved relationships with family and peers.[5]

Conclusions

The research is not clear regarding whether or not mentoring programs can produce real long-term changes in the lives of youth. However, well-planned and well-run mentoring programs do seem to have potential for building constructive relationships between unrelated adults and youth, meeting an essential developmental need for youth.[5,9,11,12,13,14,15]

The benefits of mentoring do not occur automatically. Management factors are central to youth program successes and failures. Positive behavioral changes and improvements in the health status of adolescents (including educational status) are much more likely to result in experienced, specialized local programs that adhere to well-developed quality standards.[5,11,14,15]

Specific guidelines for establishing effective programs include[12,13]:

- careful program planning;
- energy and commitment from the program manager;
- careful staffing;
- institutionalization and integration of the program;
- careful selection of mentors and youth;
- matching adults and youth;
- clear and specific goals;
- scheduling of sufficient time together;
- setting up tasks to facilitate early relationship;
- training and preparation for adults and youth; and
- ongoing support for mentors.

Additional Insights Gained from Research

Program Planning

Many "mentoring programs" are really education and training efforts or youth programs with mentor-like activities and services. It is important to distinguish between the different features of a program when planning, implementing and evaluating it.[11]

Often, mentoring programs are designed with a particular type of youth in mind to serve, but the actual youth served by the program are different because someone outside the program is responsible for referring them. This is important for determining what services to provide, and how to provide them, and for arriving at reasonable expectations for the program's impact.[11]

The Mentor-Mentee Relationship

The goals for the relationship should be clear and within the mentor's power to achieve, and the mentor must be empathetic, able to assess accurately the needs of students, and able to apply resources appropriately and regularly.[11]

Two categories of mentoring relationships emerged in one detailed study.

1) ***developmental relationships***, in which the adult volunteers held expectations that varied over time in relation to their perception of the *needs of the youth*. They had a greater emphasis on keeping the relationship going, enjoyment, and a sensitivity to the youth's satisfaction with the relationship.
2) ***prescriptive relationships***, in which the adult volunteers viewed as primary *their* goals for the match rather than the youth's. These adults tended to set the goals, pace, and groundrules for the relationship. The mentors were less likely to adjust their own expectations of the youth or youth's behavior.

Developmental relationships were more likely to result in longer-lasting contacts and mutually satisfying relationships, a fundamental requirement for program goals.[16]

In general, mentors who felt they had to build a relationship with the youth felt they were less successful than those who concentrated on developing the youth's competence, and were the most self-critical. Mentors who engaged in a concrete activity with the youth to build his or her competence felt most satisfied with the experience.[11]

A quality match (mentor-mentee) tends to result in long-lasting relationships (sometimes up to a decade after the match was made), mutually satisfying relationships, as well as higher educational attainment and ultimate income level.[4,16]

Paid front-line staff also assume mentoring roles for the youth. They actually interact with the youth more than the mentors do, certainly in school-based programs where teachers and counselors who are part of the project see the students daily.[13]

Program Infrastructure

The standards and supports employed by Big Brothers/Big Sisters of America (BB/BSA) programs are believed to be superior to many other mentoring programs. They are deemed critical in making the relationships work and thus in generating the strong impacts reported.[5] The support and supervision necessary for mentoring initiatives to produce effective matches costs roughly $1000. per match.[5]

Practices that are a part of the BB/BSA program deemed critical for its success include: 1) "hard" screening procedures for determining volunteer eligibility (e.g., police checks, personal references and employment status); 2) a well-implemented and consistent system of supervision that will, at minimum, prevent egregious deviations from the program's policies regarding the required frequency of meetings; 3) a match procedure that takes into account youths' and parents' preferences as well as practical, logistical, and other subjective factors; 4) regular contact by caseworkers with match participants—volunteers, youth and parents—during the first year, and intervention as necessary with information and/or referrals.[14]

Summary

Mentoring programs are receiving a lot of attention and many believe they offer a huge potential for addressing many different needs of young people today. It is true that some mentoring programs have produced improved academic performance, healthy behavior, earning ability, and less dependence on social supports. However, mentoring is probably better seen as a way to help meet youth's most basic developmental needs, rather than a way to address specific problems after they occur. Bonnie Bernard perhaps said it best:

> "It is neither a panacea nor a substitute for social policy but simply a context in which to create the empathy and caring that is essential for building a good and civil society."[12]

In addition to the references that follow this report, there is a wealth of information in the literature regarding the implementation of mentoring programs. Program managers would be wise to consult them, as the practices can have an enormous effect on the ultimate value of a mentoring program.

Submitted by: Ley Schleich, MHA, CHES

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A PLAN FOR THE FUTURE

Adolescent Health Research Updates

Supplement to the Adolescent Health Plan

No 4 — May 1997

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Sexuality Education Program Effectiveness

Sexual activity among adolescents has been identified as a significant public health problem in this country for the past thirty years. In the 1970's, we were most concerned with the high incidence of teenage pregnancy and "VD" (venereal disease.) The 1980's brought awareness of HIV/AIDS infection. Today the problems and lifelong consequences of too-early sexual activity in teens (unintended pregnancies, abortions, unprepared parenthood, HIV and other sexually transmitted diseases, financial dependence and emotional problems) affect and deeply concern us all, individually and as members of communities.

The "Youth Risk Behavior Survey: Alaska Report 1995"[1] provides valuable data related to sexual behavior among Alaskan teens:

- Nearly half (47%) of high school students reported that they have had sexual intercourse at least once.
- Nearly one-quarter (23%) of Alaska middle school students have been sexually active.
- Almost one in ten (9%) of all middle school students have had sexual intercourse before they reached 12 years of age.

Alaska's teens are at risk, and because the consequences reach well beyond youth and their own families, we are all at risk for the negative effects of their sexual behavior. What can we do to help young people make better, less risky, choices regarding their sexual behaviors? What activities might we invest in that would help our teens delay sexual involvement until they have the maturity to form healthy, sustaining relationships of adulthood?

Although sexuality—what it means to be male or female— is a complex and broad subject indeed, and "sexuality education" in some cases covers a very broad range of topics, almost all sexuality education programs, past and present, have addressed teen sexual behaviors and attempted to delay sexual involvement among teens. This *Research Update* focuses on programs with this aim, and will use the term "sexuality education", recognizing that sexuality education includes many more topics than sexual behavior alone.

History

Formal sexuality education programs have been a part of our education system in the United States for several decades.[2] There have been four "generations" of change in sexuality education approaches over the past thirty years.[3] An understanding of these four generations are helpful in order to consider where we are today, and where should we go next.

The first generation of sexuality education programs occurred in the 1970's in response to the high rates of teenage pregnancy. These programs were "fact based" and rooted in the premise that if teens had a greater knowledge about reproductive anatomy, sexual intercourse, pregnancy, the likelihood of pregnancy, the consequences of childbearing, and methods of contraception, they would choose to avoid unprotected intercourse.

The second generation evolved from the first, largely in response to HIV/AIDS. These programs included substantial information and devoted more attention to values clarification, general decision making, and communication skills.

Evaluations of curricula based on these first two approaches have documented that while they did increase knowledge, they did not seem to produce much of a reduction in the risk-taking behaviors of teens.[3]

The third generation of programs did not evolve from the earlier programs, but developed in reaction and opposition to them. Called "abstinence-only" approaches, they are supported by a morality based belief that teens should not engage in sexual activity until marriage.

Today's sexuality education curricula represent a mixture of the lessons learned in the first three. The main difference between these programs and those that preceded them is that they are based on theoretical approaches demonstrated to be effective in other health areas, such as tobacco and substance abuse. These "abstinence-plus" curricula emphasize: 1) the positive aspects of abstinence and delayed sexual activity for teens—it is good to be abstinent as teens, and 2) the notion that all teens must practice effective contraception if they become sexually active.

There has not been a distinct transition from one generation of sexuality education to the next. In fact, both the third and fourth type of approaches are employed today. Therefore, it is important to clarify the differences between them.

Abstinence-only: *Programs and curricula that emphasize abstinence as the only solution to teenage pregnancy and the other health risks (STD, etc.) of too-early sexual activity. Other preventive methods such as condoms and contraceptives are not discussed. Most abstinence-only programs stress marriage as the only place in which sexual behavior should be expressed. Popular abstinence-only programs include: "Sex Respect", "Teen Aid" "Project Taking Charge", and "Success Express".*

Abstinence-plus: *Programs that emphasize abstinence as the healthiest choice for adolescent pregnancy and disease prevention, and explore other aspects of pregnancy/disease prevention, including delaying intercourse, strengthening resistance and communication skills, and using contraception. Broadly used abstinence-plus programs include: "Postponing Sexual Involvement", "Reducing the Risk", "School/Community Program for Sexual Risk Reduction in Teens", and "Teen Talk".*

Program Effectiveness

Sexuality education programs vary greatly in format, scope and content. Programs have been implemented in schools, churches, clubs, health clinics, family planning and STD clinics, and in other community agencies. There have been substantial efforts over the past few years to pull together evaluation information on a number of programs and curricula currently being used across the country.[3,4,5,6,7,8,9,10]

In a research review[10] published in March 1997 by Douglas Kirby, over 4,000 evaluation reports spanning several decades were reviewed to assess the ability of sexuality education programs to alter teen behavior. Kirby offered the following conclusions, which are highly consistent with other evaluation research:

No abstinence-only educational program has been found to delay the onset of intercourse, but very few such programs have been well evaluated, and, thus, there is little evidence to determine whether or not abstinence-only programs can delay intercourse.[7,8,10,11]

Sexuality and HIV education programs that include discussion of condoms and contraception do not increase sexual intercourse, either by hastening the onset of intercourse, increasing the frequency of intercourse, or increasing the number of sex partners.[3,4,5,7,8,9,10]

Some programs have not measurably reduced unprotected sexual intercourse, either by delaying the onset of intercourse, reducing the frequency of intercourse, or increasing the use of contraceptives. However, several studies with credible evidence found desirable effects upon delay in the initiation of intercourse, frequency of intercourse, number of sex partners, use of condoms, or use of contraception more generally. However, few studies measured and found long-term effects.[3,4,5,7,8,9,10]

Effective curricula shared a number of characteristics, which may be linked to their success, while the less successful or ineffective curricula lacked one or more of these characteristics. The Centers for Disease Control and Prevention (CDC) commissioned a research team to review the studies of school-based programs designed to reduce sexual risk-taking behavior and to assess the program's impact on actual behavior. Effective programs were characterized in their findings as those that:[5,10]

- included a narrow focus on reducing sexual risk-taking behaviors that may lead to HIV/STD infection or unintended pregnancy;
- used social learning theories, social influence theories or theories of reasoned action as a foundation for program development;
- either lasted at least 14 hours or taught students in small groups and used small group exercises to increase the efficiency of the time spent;
- employed a variety of teaching methods designed to involve the participants and have them personalize the information;
- provided basic, accurate information about the risks of unprotected intercourse and methods of avoiding unprotected intercourse;
- included activities that address social pressures on sexual behaviors;
- reinforced clear and appropriate values and messages in order to strengthen individual values and group norms against unprotected sex;
- provided modeling and practice of communication and negotiation skills;
- provided training for individuals implementing the program.

In general, the most successful of the evaluated programs (programs with demonstrated behavior change) incorporate expertise and assistance from multiple community agencies and resources, parents, health care professionals, trained teaching staff, and peer role models. However, even with the more successful programs, the effects have not been measured beyond 18 months and reductions in the birth and pregnancy rates remain largely unknown due to difficulties in measurement.[2]

Summary

Policy makers, program providers, communities, tax payers and parents are all looking for effective strategies to lower the rates of teen pregnancy and the other negative consequences of early sexual activity among our youth. The fact that a few sexuality education programs have been able to demonstrate some behavior change in adolescent sexual activity is encouraging. Sexuality education curricula based on scientific theory, built on knowledge gained from past models, and combined with rigorous evaluation offer promise.

Before limited resources are committed, Alaskans wanting to implement a sexuality education program would be wise to closely examine any program or curricula proposed to assure that the outcomes claimed have been clearly demonstrated in soundly conducted evaluations. Additionally, programs to alter teen sexual behavior must be seen as only part of the solution, given that the effects are so tenuous. A sound teen pregnancy prevention and/or teen sexual health initiative will have sexuality education programs as part of a much broader campaign that address risk and protective factors of adolescent behavior.

Alaska's adolescents are of great value to us, as our future workers, parents, voters, citizens. They certainly deserve our best investment!

Submitted by: Mary O'Bryan, R.N., B.S.N.

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A PLAN FOR THE FUTURE

Adolescent Health Research Updates

Supplement to the Adolescent Health Plan

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School-Based Health Centers

In 1985 there were forty school-based health clinics or centers (SBHC) in the United States. In 1994 there were more than 500, and by 1996 there were 900.[1,2] Alaska has one SBHC, located in Juneau.[2] Clearly, there is a movement in parts of the nation toward operating health centers in schools.

What is a school-based health center?
Do they work?
Would we benefit from having more of them in Alaska's communities?

These are the questions this Adolescent Health Research Update will address.

History

Although school-based health clinics or centers are often referred to as a modern approach to the ills of adolescents, they are not new. The concept of providing health services in schools has been around for a century, as communities responded to threats such as lice, malnutrition, and infectious diseases. In other eras, we have had doctors, dentists, and nurses, as well as free food and social services, available in our schools. The extent of health and other non-academic services located within schools has waxed and waned partly as a result of the political moods of the country.[3,4]

Today only fifteen percent of schools in this country have full-time nurses. There is a growing interest in locating more health care and other family- and community-oriented services within schoc!s. The concepts of "one stop shopping" for access to health care and social services and of "full-service schools" are being considered and tried in a number of places.[4] The underlying assumptions behind these efforts are that:

1) education is valuable;
2) children learn better if they are not hungry, sick, or afraid; and
3) the longer one stays in school the better the subsequent adult life.[5]

The first modern SBHC was in Dallas in 1970. By the early l980's there were ten. The early ones included some pregnancy prevention components.[4] Published results, particularly from St. Paul, indicated that school pregnancy and birth rates had been lowered as a result of having a school-based health center. This news sparked many more SBHC efforts and the concept snowballed across the country. Later research indicated that the drop in teen pregnancy rate noted in the earlier studies from St. Paul was part of a community fluctuation, unrelated to school clinics.[6] Meanwhile, however, the emphasis had shifted somewhat from pregnancy prevention to general medical and psychosocial care. States began taking on the role of supporter/guider of SBHC.[4] Today more than fifty percent of SBHC's receive at least some state funding.[2] Health centers exist at every educational level—grade school, middle school and high school.

Components of School-Based Health Centers

A school-based health center can be any health clinic or service, located within a school. SBHC's are usually provided by some community group that is separate from the school and are most often funded by entities separate from the school.[4] A school-based health clinic or center is like a cafeteria in that it can have any number of items on the menu of services. Joy Dryfoos in *Full Service Schools* gives a list of possible components of a health clinic. She goes on to say that virtually every health, mental health, psychosocial, family, or community program could be and has been considered and tried on the SBHC smorgasbord platter.[4]

A report written for the Centers for Disease Control lists more than

thirty-five medical services considered essential for a high school health center.[7] These can be loosely grouped as follows:

1) preventive services, including various health screenings, dental screening, immunizations, and physical exams;
2) care of minor illnesses and injuries, prescribing and dispensing of medications for both acute and chronic conditions, and sexually transmitted disease (STD) diagnosis and treatment;
3) mental health services;
4) health education, including substance abuse, nutritional guidance, and pregnancy prevention and family planning;
5) social services, including case management and referral services; and
6) basic lab tests.

Do School-Based Health Centers Work?

The extent to which health clinics in schools "work" can only be answered in terms of for whom and for what problems the clinics have been established. Where a positive impact has been shown, it is helpful to know which aspects—which items from the menu of services—are the most important.

Answering these questions is problematic, however. Measuring effectiveness is expensive and difficult to do with statistical accuracy. Good controls are almost impossible to find, as schools rarely differ in just one component. Community-based private or public agency programs have not necessarily been rigorously evaluated for comparison. Measures such as birth rates and drop-out rates are gross measurements and may not reflect more subtle benefits that might occur, especially in the area of mental health. Despite the difficulties of evaluations, the following summaries offer conclusions gleaned from available reviews of SBHC's.

Getting Needed Services

Just as location, location, and location are the three most important factors in the real estate business; access, access, and access are deemed to be the most critical factors in delivering health care services to adolescents. Specifically,

- physical access (accessibility)
- economic access (affordability), and
- lifestyle access (comfort and convenience)

are believed to be major determinants in adolescents' ability to use health resources. It is believed that teens will not be as likely to go to hard-to-get-to sites, that many can't afford to get private care, and that the convenience of school-located facilities makes SBHC's particularly helpful for high-risk teens needing multiple visits for multiple problems.

Some beliefs about access are supported by research.[4] School-linked health services that are not located in the school are indeed less utilized. At-risk students within any given school utilize SBHC's at a rate higher than other students.[4]

Access issues also involve hours of operation. High quality preventive care, mental health care, non-acute care, and some primary care can be offered at an SBHC without twenty-four hour coverage. However, young people do not experience their physical illnesses and health care needs only between 8 am and 5 pm on weekdays and only during the school year. Although twenty-four hour coverage is recommended,[7] few SBHC's offer this. Evaluations and large reviews of SBHC's have made little reference to the impact of limited hours of operation on students' health needs.

Pregnancy

The effect of SBHC's on teen pregnancy and birth rates has been reviewed by many researchers, including Joy Dryfoos[4] and, most recently, Douglas Kirby.[6] Kirby reviewed five studies that looked at SBHC effects on sexual behavior. Each of these studies included three or more schools. Kirby noted flaws in the experimental designs of all five studies, and further concluded that school pregnancy and birth rates are unrelated to either the presence of a SBHC or the availability of condoms in schools. Some multi-component programs with SBHC's have shown modest results, but those desired effects drop off after a program is ended.

A 1993 U.S. Public Health Service report has also described their evaluation research of the effects of SBHC's on teen pregnancy.[8] Their findings are similar to Kirby's, and they too identify a number of problems with the research, such as cohort studies without random assignment and a lack of long-term evaluations. Like Kirby, they cite some decrease in numbers of pregnancies in some multi-component programs.

In a review article by Dryfoos, a California evaluation of programs with specific pregnancy prevention goals showed success in reducing the rate of initiation of sexual activity and increasing contraceptive use.[9]

Dryfoos and Kirby both conclude that no negative effects such as increased sexual behavior, less contraceptive use or more pregnancies result from the presence of SBHCs.

Mental Health

While outcome studies of the mental health components of school clinics seem to be few[10] and not very significant,[11] the utilization of school-based mental health services is high,[4] indicating a strongly felt need on the part of some students. Students with high-risk behaviors are especially heavy users of mental health clinics according to some studies.[9]

Physical Health

Some SBHC's have been associated with less emergency room utilization or hospitalization, some with more visits for health care than before the SBHC were available, and some with more specialty care (family planning, and sports physicals, for example).[9] The actual relationship between SBHC's and improved physical health is unknown.

Academic Performance

Some SBHC's have been associated with decreases in rates of suspensions, in truancy, and drop-outs.[4,12] The effect that a SBHC has upon students' academic performance has not been successfully measured in a significant number of programs.

Substance Abuse

Some SBHC's have been associated with decreases in student substance abuse[4] and school suspensions.[9]

Elements of Quality Programs

Quality of care in the context of health care delivery seems to be an under-examined issue. There is little reference to it in the SBHC evaluation research and reviews. As state initiatives to fund SBHC's have increased, however, many states are providing standards of care guidelines.[1]

Furthermore, several authors have identified elements deemed most important for SBHC's.[6,7,12,13] They include:

- local needs assessment was conducted[7]
- program is based on theoretical models with demonstrated efficacy[6]
- program has good leaders[12]
- patient confidentiality is maintained[7]
- school staff is valued[12]
- health-related services are integrated into entire school health program[7]
- providers collaborate well[7]
- comprehensive services are provided by a mutidisciplinary team[7]
- program includes 24 hour care and provision of a medical home[7,13]
- good referral and follow-up are evident[12]
- programs are long term.[6]

Do We Need More School Based Health Centers in Alaska?

The research literature suggests school-based health centers can help address a number of adolescent health concerns. They have the potential to improve the health status and educational achievement of youth, but they require considerable effort and resources to be effective, and measuring the specific impacts remains problematic. It may be that some services, such as mental health, are especially beneficial for students, but we as yet lack the specific evaluation information.

A community should look at its needs before it decides if a SBHC would benefit them. If a significant number of children or adolescents are not finding one or more of their health requirements met by the existing health care delivery system, then a SBHC may be a good option for the community to consider.

The cost effectiveness of SBHC's is not known.[4] It is not clear from the review literature which system of financing and management of SBHC's is best. What is certain is that long term financing must be in place. The subjects of organizing and financing are beyond the scope of this Research Update, but they are critical if a SBHC is planned.

Individuals considering employing school-based health centers would be wise to first consult books such as *Full Service Schools*[4] and subscriptions to SBHC information centers like *Making The Grade*.[2] Bibliographies are also available with additional information and guidelines.[14] An article by Guernsey in *Health Care in Schools, State of the Art Reviews*[15] provides a good overview. Information about the only Alaskan SBHC (in Juneau) can be obtained through the Juneau Public Health Center, (907-465-3353).

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A PLAN FOR THE FUTURE

Adolescent Health Research Updates

Supplement to the Adolescent Health Plan

No 6 — November 1997

Research Updates are periodically distributed from the Alaska Adolescent Health Advisory Committee (AHAC). AHAC believes that effective planning for the health of Alaska's adolescents should have a strong scientific basis. ***Alaska's Adolescents: A Plan for the Future***, the 1995 publication by AHAC, was the product of the committee's review of research related to adolescent health at that time. In order to stay current with new information, AHAC continually reviews research dealing with a broad range of adolescent health topics. Summary reports are prepared by AHAC members for distribution to people interested in teen health, especially those who use ***Alaska's Adolescents*** as a guide for their efforts in the field. Feedback about the usefulness of these updates is welcomed.

Peer Education Programs

Peer education is currently a very popular prevention strategy, being incorporated into a variety of youth educational programs. As with all strategies for enhancing adolescent health, it is important to understand peer education in more depth than what is provided through a quick program description review. Specifically, this Adolescent Health Research Update will address the following questions:

What is peer education?

Does peer education work?

What program elements are required for its success?

Background

For as long as there has been formal teaching, students have generally been asked to assist other students in some form or another. Different models and methods have been used, but in general, older students who initially functioned as monitors expanded their roles to include assisting other students with their studies.[1]

During the late 1960's, adolescents in the United States matured in a rapidly changing and increasingly complicated society. They began to seek help and information more from each other and less from parents, teachers, counselors or other adults with whom they had consulted in the past. Formal peer education programs emerged in the 1970's and have continued to evolve through the 1990's.[1] As issues and demands facing adolescents have continued to grow, the programs have expanded in number, popularity, and variety.

Today, many educators, community leaders, parents and other adults look to peer programs as a way to influence positive life skills and assist young people in reducing their health risks. To this end, there are a number of definitions and descriptions of peer programs. This report examines "peer education" programs only. A more detailed explanation of "peer programs" can be found on pages 160 and 161 of *Alaska's Adolescents: A Plan for the Future* (the Alaska Adolescent Health Plan).

The following working definition for peer education is currently being used by many groups, including the National Peer Helpers Association and Advocates for Youth:

> Peer Education (youth seminars, youth-run conferences, teens as teachers, cross-age teaching, teens as trainers, peer leaders) are programs in which:
>
> - youth educate their peers or younger children on personal/life skills or on pertinent societal issues such as substance abuse, tobacco, or HIV/AIDS; and
>
> - youth learn important skills related to designing and delivering effective presentations or workshops.

These programs can range from one-time presentations to intensive semester-long programs.

The theoretical basis for the use of peer education is primarily based on the Social Inoculation[2] and Social Learning[3] theories. Social Inoculation theory describes how a person's resistance to social pressure (to such things as smoking, using drugs or engaging in risky sexual behavior) is greater if the person has been "inoculated," or has developed arguments in advance with which they can counter the pressure. Peer educators provide the vehicle for more realistic practice of the counter-arguments in such learning skills as role-playing. Social Learn-

ing theory explains why the planned use of role models to whom the audience can relate is critical in learning situations. The use of peer educators in health education and prevention programs has emphasized modeling appropriate behavior, teaching social skills, and leading role plays, rather than simply providing factual information.

The Effectiveness of Peer Education

A critical review of the research literature on peer education programs has revealed a variety of findings. The programs included for review were varied in that they: were both structured and non-structured, used both cross-age and same-age peer educators, had the peer education both substitute and supplement conventional teaching, and used both trained and untrained peer educators.

It appears that there has been no clear, systematic evaluation of peer programs.[3,4,11] However, the following are the evaluation findings deemed most relevant for the fields of health education, health promotion and risk reduction.

1. The peer education process appears to have a positive effect on academic and attitudinal growth for both the peer educators and the recipients of the education, even though many peer education programs lacked a sound theoretical and conceptual basis.[3]

2. Although few studies have measured long term behavior change (beyond one year) in either the peer educator or the recipient, there are a few that indicate long term positive behavior change.[3,4,15]

3. Peer educators themselves often benefit the most from the peer education experience.[5]

4. No studies reported any detrimental effects from being a peer educator.[4,8]

5. Peer-assisted interventions lowered students' risk for HIV infection, smoking, and substance abuse by improving their knowledge, attitudes and behavior related to these conditions.[8,9]

6. Peer educators can change perceptions of what is normal behavior for teens, thereby positively influencing behavior.[11,12,13]

7. A peer education program for middle school students reported significant reductions in aggressive behavior.[10]

8. Trained peer educators were deemed by students to be a more credible source of information than were adult educators.[3,10,11,16,17]

9. Studies comparing peer-led versus adult-led education programs found peer educators produced the greatest attitude changes related to the adolescents' perception of personal risk of HIV infection.[3,10]

The above findings indicate peer programs are being used successefully in a myriad of settings to enhance, and in some cases take the place of traditional health education programs. Furthermore, peer education can increase the number of students receiving health education, suggesting it can be a wise investment of resources.[5,8,16] The following section offers insights regarding ways in which the likelihood for success can be enhanced.

Components of Effective Peer Education Programs

Peer education programs are not equally effective. Bonnie Bernard, in her exhaustive survey, found the following components to be essential for creating effective peer programs.[13] (Readers will note that several of the components described here are identical to those included in the "Critical Elements of Successful Programs" section of the Alaska Adolescent Health Plan, as well as in other health education literature.)

- **Adequate supervision**
  Youth MUST be given ongoing supervision, feedback and guidance from program staff!

- **Positive interdependence**
  Peer educators and students must each believe that it is in their best interest for each other to succeed at teaching/learning. This can be achieved through mutual goal setting, dividing resources and tasks among group members, and sharing in joint rewards.

- **Face-to-face interaction**
  Peer educators must interact with each other to achieve a common goal.

- **Individual accountability**
  Peer educators must be held personally responsible for providing help and support to each other.

- **Training in social skills**
  Peer educators must be trained in the social skills necessary to build and maintain relationships, i.e. communication, assertiveness, conflict resolution, problem-solving, etc..

- **Time for group processing**
  Peer educators must be given the time and guidance to reflect on and assess the delivery of their messages.

- **Heterogeneous composition**
  Peer educators should be diverse in such things as gender, academic ability, ethnic background, and/or physical qualities and abilities.

- **Youth input**
  Youth participants must be meaningfully involved in all phases of planning, conducting, and evaluating the programs.

- **Evaluation**
  Action must be taken to measure the degree to which the needs of the participants as well as the peer educators are being met, and adjustments made in response to the findings.

Conclusions

As with most prevention strategies, peer education has limited potential for addressing the broad range of factors that influence adolescent health. However, carefully planned and implemented peer education programs have much to offer as part of a more comprehensive multi-faceted approach to youth risk reduction.[14,15,16,17]

Although most peer education programs lack formal outcome evaluation measures (long-term), impact evaluations of peer health education efforts report positive effects on participant knowledge, attitudes, and behavioral intentions and change.

More rigorous outcome evaluation is essential for improving peer education programs. As with many prevention approaches, peer

education programs need to have evaluation designed as part of the planning process and not attempted as an afterthought. More work needs to be done on developing good evaluation tools and procedures to measure peer education effectiveness and long term behavior outcomes.

Submitted by Tammy Green, BA, CHES

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